



**NC Conservation Reserve  
Enhancement Program  
2010 Annual Report**

Submitted by the  
NC Department of Environment and Natural Resources  
Division of Soil and Water Conservation

## Introduction

On March 1, 1999 the initial Memorandum of Agreement established the North Carolina Conservation Reserve Enhancement Program (NC CREP) there were high expectations for the program. The goal of the program was to enroll 100,000 acres of environmentally sensitive land within the Chowan, Neuse and Tar-Pamlico river basins, as well as the Jordan Lake watershed area. Through local interest and demonstration of environmental need, North Carolina requested the program to be expanded to cover 75% of the state. On May 1, 2008, the Lumber, White Oak, Yadkin-PeeDee, Roanoke, Cape Fear and Pasquotank river basins became eligible to participate in CREP.

Establishment of NC CREP provides a voluntary initiative encouraging the enrollment of farmland and marginal pastureland into long term agreements to restore and protect riparian buffers and wetlands. Practices are designed to reduce nutrient and sediment impacts to stream courses within the targeted area. The CREP will have a positive impact on overall water quality within the targeted area.

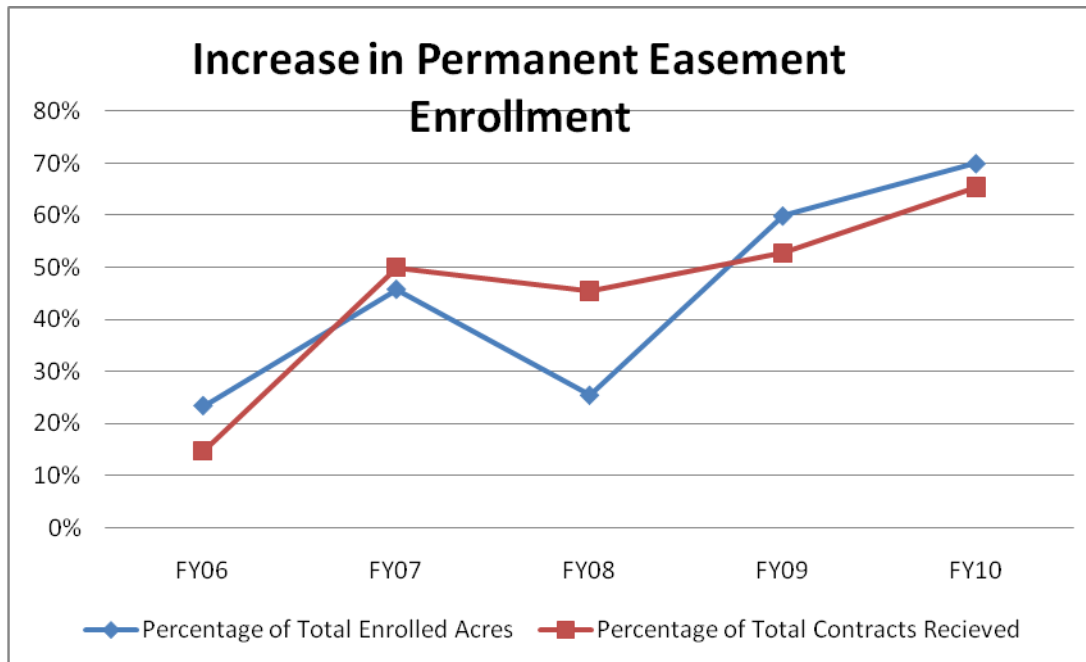
The strong partnership between the Farm Service Agency (FSA), Natural Resources Conservation Service (NRCS), N.C. Division of Soil and Water Conservation (DSWC), and the Department of Environment and Natural Resources (DENR) provides an extremely efficient mechanism for program delivery and implementation. Funding for the State's 20 percent match requirement is obtained from the N.C. Clean Water Management Trust Fund (CWMTF), the NC General Assembly and the N.C. Agriculture Cost Share Program. North Carolina continues to explore additional partners for its CREP.

## Accomplishments

### ***CREP State Incentive Enrollment***

The State Incentive Program offers long-term protection for landowners by providing the opportunity to enroll environmentally-sensitive cropland or marginal pastureland in 30-year or permanent conservation easements. CREP has been implemented in North Carolina for 11 years, enrolling more than 26,000 acres in easements and protecting approximately 721 stream miles.

CREP continues to see an increase in permanent easement enrollment. The increase is primarily due to a payment structure change and expansion of the program to 76 counties in 2008. A total of 592 acres within the expansion area has been enrolled in the state incentive program. Of that acreage, 60 percent is enrolled under permanent easements.



### ***15-Year Contracts Upgraded to Permanent Easements***

NC CREP continues to increase interest in permanent easements. This increase is attributed to enhanced marketing of the program, educating landowners about easements, simplified payment schedule and providing incentives to enroll existing forested areas. CREP continues to offer current enrollees the option to upgrade to a permanent conservation easement. One of the goals set forth in our Clean Water Management Trust Fund grant is to convert 565 acres from their current contract length to a permanent easement. As of October 2010, 459 acres have been upgraded to permanent conservation easements. Many Soil and Water Conservation Districts and partnering agencies encouraged landowners in their county to take advantage of this opportunity. This continues to be an attractive option to landowners.

### ***DENR Stewardship Database***

All acquired easements must be monitored to ensure compliance. The most effective tool available to manage monitoring initiatives is the DENR Online Property Stewardship Database. With support and assistance from the DENR Stewardship Program Director and interns, the database was populated with all CREP easements. The online portal allows improved monitoring of CREP easements by providing the capacity to upload photographs; view previous site conditions and more efficiently track changes in ownership. In fiscal year 09-10, 75 easements totaling 3,941 acres were monitored by the CREP staff. In addition, 627 acres were monitored by local soil and water conservation district staff. Monitoring reports showed only a few minor violations such as potential encroachment and forest management issues. In fiscal year 10-11, the

goal is to monitor half of all easements and capture the remaining half in the following fiscal year. The ability to utilize the DENR Stewardship database as we continue monitoring CREP easements will prove to be an asset.

As a component of the monitoring initiative boundary signs were placed at strategic locations along the easement area. As another mechanism of preventing easement violations, CREP staff has begun to review and provide comment on all mining permits submitted to the Division of Land Resources. Thus far staff has reviewed 52 mining permit applications.

### ***Water Quality Monitoring***

Due to budget reductions across the Division's programs, we requested that NC State University reevaluate our contract for conducting water quality monitoring the CREP enrollments.

University staff and principal investigators agreed to a decrease in the budget by \$20,000 and extend the grant through May 31, 2011. The request to extend the grant is to allow more time to finalize modeling efforts, to complete analysis of more than 5 years of data collected at the CREP research sites, and to produce technical reports.

In order to reduce the budget the scope of work changed in the following manner:

1. Water quality, hydrology, and soil monitoring ceased in May 2010 (a reduction of four months of sampling from the original proposal)
2. Benthic invertebrate monitoring scheduled for this year will be cancelled

The following conference papers were submitted this program year to the American Society of Agricultural and Biological Engineers based on the research conducted on CREP sites in North Carolina. The full text can be found at <http://asae.frymulti.com/techpapers.asp?confid=pitt2010>.

#### Effectiveness of Nitrate Reduction in Riparian Buffers: A Riparian Buffer Hydrologic and Biogeochemical Evaluation

Citation: Paper number 1009104, 2010 Pittsburgh, Pennsylvania, June 20 - June 23, 2010. @2010

Authors: Tiffany L Messer, Michael Burchell II, PhD, Amey Tilak, Jacob Wiseman

#### Groundwater nitrate reduction processes in a riparian buffer enrolled in the NC Conservation Reserve Enhancement Program

Citation: Paper number 1009119, 2010 Pittsburgh, Pennsylvania, June 20 - June 23, 2010. @2010

Authors: Jacob D Wiseman, Michael R Burchell II, Tiffany L Messer, Amey S Tilak

Hydrologic Analysis of a Riparian Buffer Enrolled in Conservation Reserve Enhancement Program in North Carolina Using Riparian Ecosystem Management Model (REMM)

Citation: Paper number 1009197, 2010 Pittsburgh, Pennsylvania, June 20 - June 23, 2010. ©2010

Authors: Amey Sudhir Tilak, Michael R Burchell II, Mohamed A Youssef, Richard R Lowrance, Randall G Williams, Tiffany Messer, Jacob D Wiseman

For a complete overview of the CREP monitoring project please visit <http://www.bae.ncsu.edu/topic/riparian-buffers/index.html>. This website includes the project technical data, conference presentations and other publications.

### **Cumulative NC CREP Enrollment**

CREP has seen steady interest in the enrollment of riparian buffers on pasture operations. Even though more of these enrollments have been in the Piedmont region of the state, the trend is moving east. Many of these farmers are willing to establish a permanent buffer along their streams to receive up to 100 percent cost sharing benefits to install fencing, watering facilities and stream crossings. Although small, these acreages support DENR's goal to sustain North Carolina working lands. Water quality benefits are substantial when considering the number of stream miles being protected through these enrollments.

CREP also provides support for the establishment of longleaf pine ecosystems in North Carolina. Approximately 585.2 acres of longleaf pine have been planted through CREP. Of those acres, 53 percent have long-term protection through a permanent conservation easement while the remaining acres are protected by a term easement. A continued increase in CP3A Hardwood Tree Planting enrollment is expected this upcoming program year.

The following table shows the distribution of enrollment among each eligible practice.

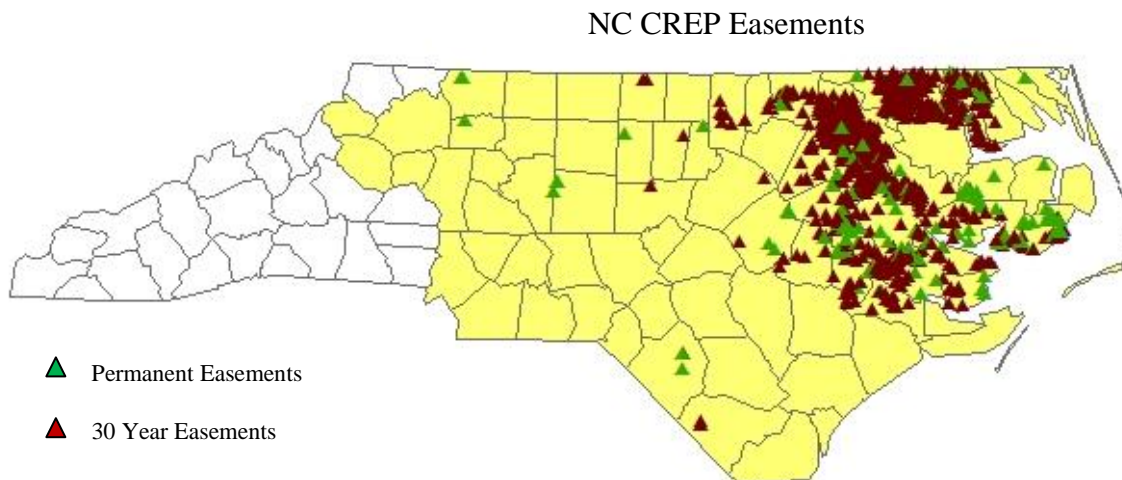
	Program Year 2010		Cumulative	
	Number of Acres	Estimated Federal Cost Share	Number of Acres	Estimated Federal Cost Share
CP3	33.8	\$7,648	97.2	\$17,109
CP3A	399.5	\$94,458	2366.9	\$334,643
CP21	8.3	\$0	1910.4	\$461,861
CP22	53.3	\$101,265	26160.7	\$2,140,515
CP23	83.2	\$23,524	2573.3	\$335,342
CP31			6.3	\$710
<b>Total</b>	<b>578.1</b>	<b>\$226,895</b>	<b>33,114.8</b>	<b>\$3,290,180</b>

One of the goals of the NC CREP is to assist agricultural landowners in achieving the requirements of the nutrient reduction regulations. Currently, the following watersheds have active nutrient sensitive waters strategies: Neuse River Basin, Tar-Pamlico River Basin and Jordan Lake Watershed. Draft strategies have been proposed for the Falls Lake Watershed which is located in the Neuse River Basin, and the High Rock Lake Watershed which is located in the Yadkin Pee-Dee River Basin. CREP staff has participated in landowner outreach meetings to provide CREP as an option to meet the current and/or upcoming nutrient reduction rules. Thus far both the Neuse and Tar-Pamlico Agricultural Nutrient strategies are being met. Voluntary best management practices such as those offered through CREP contribute to achieving these reduction goals.

Based on estimates of the environmental benefits of installed practices NC CREP estimates the following nutrient and sediment reduction benefits:

<b>Stream Miles Protected</b>	<b>Sediment Reduction</b>	<b>Nitrogen Reduction</b>	<b>Phosphorus Reduction</b>
911 miles	240,746 tons	1,892,496 lbs	438,465 lbs

The nitrogen and phosphorus estimates were calculated using the North Carolina Agricultural Nutrient Assessment Tool (NCANAT). The tons of soil saved were calculated using the Revised Universal Soil Loss Equations (RUSLE).



The following table shows the enrollment acres by county for program year 2010 as well as cumulative data. Take note that approximately 78% of the total enrollment is protected through long term conservation easements. This is protecting approximately 911 stream miles.

County	Program Year 2010			Cumulative to Date			
	Number of Contracts	Number of Acres	Miles of Buffer*	Number of Contracts	Number of Acres	Miles of Buffer*	Total Acreage in long-term easements
Beaufort	2	16.8	0.46	144	1979.2	54.45	1281.65
Bertie				55	480.9	13.22	55.54
Caswell	2	33.8	0.93	4	44	1.21	34.05
Chatham				1	30.7	0.84	30.70
Chowan				48	349.4	9.61	154.78
Columbus	1	24.3	0.67	5	64.2	2.08	65.78
Craven				99	1847.9	50.82	1609.25
Duplin	1	14.8	0.61	1	14.8	0.61	0.00
Edgecombe				226	3333	91.66	2629.45
Franklin				1	10.1	0.28	10.10
Gates				127	1659.4	45.66	1566.86
Granville	1	8.5	0.23	35	411.9	11.33	218.82
Greene				107	750	20.63	423.66
Halifax	5	180.8	4.97	290	4753.9	130.73	4187.75
Hertford				123	1759.2	48.38	1522.50
Hyde	1	7.8	0.21	104	4097.9	112.69	3947.87
Johnston	1	22.3	0.61	116	664.5	18.16	213.75
Jones				17	285.4	7.85	290.68
Lenoir	1	10.8	0.30	148	1,262.6	34.72	637.94
Martin	2	97.3	2.68	132	1825.1	50.19	1432.36
Nash				48	1029.9	28.32	870.34
Northampton	1	17.2	0.47	197	2313.1	63.61	1825.74
Orange				1	5	0.14	5.10
Pamlico				17	242.6	6.67	221.95
Perquimans	2	24.9	0.68	3	28.1	0.77	3.20
Person				1	2.4	0.07	0.00
Pitt	2	10.1	0.28	59	658.6	18.11	553.55
Randolph	1	8	0.22	4	35.3	0.97	38.36
Robeson	2	18	0.50	3	35.7	0.98	35.62
Rockingham	1	5.4	0.15	6	48.2	1.33	10.82
Surry	2	8.1	0.22	2	8.1	0.22	14.96
Tyrrell	4	31.9	0.88	8	112.3	3.09	112.31
Vance				41	241	6.63	73.80
Wake				4	80.5	2.21	1.20
Warren				37	1076.1	29.59	964.52
Washington	2	39.8	0.90	16	674	18.71	876
Wayne				84	472.9	13.00	123.53
Wilson	1	7	0.19	59	421.1	11.64	185.99
Yadkin				1	5.6	0.15	5.6
<b>Total</b>	<b>35</b>	<b>587.6</b>	<b>16.159</b>	<b>2,373</b>	<b>33,115</b>	<b>911</b>	<b>26,236</b>

\*Due to the privacy restrictions required by the Farm Security and Rural Investment Act of 2002 some of the county enrollments are estimates based on easement participation.

## Challenges

### *Federal Caps on Pasture BMPs*

Since the expansion of CREP we have experienced quite a bit of interest in the western piedmont of North Carolina. Most of these enrollees or potential enrollees are pasture operators who are opting to enroll in permanent easements. NC CREP allows up to 100% cost share to install the practice on those permanent easements enrollments. Unfortunately, CRP has maximum caps established for several components for CP22 Riparian Buffer on marginal pastureland. These caps on the following BMPs were becoming a hindrance for landowners when deciding to commit to CREP. This is a concern because the landowners would still have to meet NRCS standard for fencing, watering facilities and livestock crossings however they would not be receiving the 100% cost share as initially understood.

- Cost share for the total of all water developments per contract shall not exceed \$3,000
- Cost share for the total of all water facilities per contract shall not exceed \$2,000
- Cost share for the total of all pipelines shall not exceed \$2,000
- Cost share for all livestock crossings is limited to \$1,500 per contract

In an effort to uphold the policy of 100% cost share on these easements, the NC Agriculture Cost Share Program has reimbursed the difference. The Division of Soil and Water Conservation is committed to continue this practice as long as funding is available.

### *State Budget Restraints*

The state budget deficits have taken a toll on the DSWC's budget, like all state agencies. In response to the state's budget deficits, the Division had to identify a reversion 3.5% of its FY 2010-2011 budget. In addition, 5%, 10% and 15% permanent reductions had to be identified for the upcoming FY 2011-2013 budgets. As budgets were reduced throughout the Division CREP was no different. However, the Division is committed to continue to implement the program at its fullest ability as we continue to deal with the budget issues. Measures have been put in place to ensure that landowner and partnering agencies needs are met while adhering to travel and purchasing restrictions. During this time, priorities have been reorganized; focusing on training and marketing initiatives which present positive results. Staff continues to reduced travel to meetings by utilizing conference calls and web meetings instead. This measure allowed our travel budget to be focused on partnership training, site visits and landowner conferences. These internal measures will allow us to continue the expected level of customer service to our clients.

The CREP staff once consisted of a total of 14 positions. The majority of these were receipt positions funded solely through grants. As the initial easement acquisition backlog was closed and the change in funding these positions became an issue, the Division had to evaluate



efficiency and workload. Unfortunately, in December of 2009, the Division reduced the CREP staff by eliminating 6 receipt supported positions. Currently CREP is operating with a core staff of eight (CREP Manager, Agency Legal Specialist, Paralegal, Land Surveyor, Survey Technician and three Environmental Specialists). Currently, the CREP Manager and Survey Technician positions are vacant. The Division is hoping to fill these positions as soon as possible; however we are currently experiencing a hiring freeze within the state.

**State CREP Expenses**  
**PY 2000-2010**

	<b>Expended</b>
State Bonus Payment for State Option	\$ 8,500,159.20
NCACSP Cost Share Payments	\$ 2,016,311.00
Soil and Water Conservation Administrative Fees	\$ 62,108.98
State Administration Expenses	\$ 6,820,625.79
NCACSP Technical Assistance	\$ 1,574,035.00
County Funded Technical Assistance	\$ 1,541,412.00
Operating Support	\$ 1,834,232.00
CREP Pilot Program	\$ 12,000.00
Monitoring	\$ 1,586,269.37
Stewardship	\$ 1,658,748.76
<b>Total</b>	<b>\$ 25,605,902.10</b>

CREP has a total of 8 staff positions. Previously, the Clean Water Management Trust Fund paid for up to nine positions (two CREP specialist, three paralegals, two attorneys, one registered surveyor and one survey technician). Currently the agreement between the Division and CWMTF is based on transactional costs. CWMTF reimburses the Division per easement closed and on a per-acre cost for surveying. These funds support .25 FTE of the CREP staff, state appropriations support the remaining 7.75 employees and one position was supported by a Section 319 grant until November 2008.

The State pays the Districts up to \$11 per acre for administrative costs incurred processing 30-year and permanent enrollments, plus a fee for permanent enrollments.

The N.C. Agriculture Cost Share Program can pay for a portion of all BMPs proposed for CREP.

Districts in the targeted basins and watershed have technicians whose salaries and operating expenses are paid at 50 percent by the State. The Division has estimated 3.5 FTE's for the current CREP watersheds.

District employees that are paid by the local governments provide technical assistance to CREP. The Division has estimated five FTEs for the current CREP watersheds.

CREP Pilot Program was a partnership with the Tar River Land Conservancy to target potential enrollments in the following counties: Person, Granville, Vance, Warren, Halifax, Franklin, Nash and Edgecombe.

NC CREP has entered into a contract with North Carolina State University to provide the environmental monitoring on CREP sites.

CREP easements will be monitored in conjunction with the DENR Stewardship Program.

NC funded the Programmatic Environmental Assessment needed to complete the expansion proposal.

**CREP Total Federal and State Expenditures**  
**PY 2000-2010**

CRP Payments (Life of Contract)	\$ 53,650,085
Total Incentive Payment	\$ 1,728,486
Estimated Federal Cost Share	\$ 3,339,064
State Expenses for CREP Enrollments	\$ 25,605,902
<b>Total Program Costs</b>	<b>\$ 84,323,537</b>

The total federal and state costs of CREP for program year 2000 through program year 2010 was \$84,323,537. The state contributed a 30% match, thus meeting the requirement for incurring 20% of the total program costs.

The state funds do not include state appropriated and awarded grant funds available, but not yet expended.